

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION FOR LETTERS PATENT

**E-Commerce System and Method for Automated
Configuration of Trading Relationships**

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ATTORNEY'S DOCKET NO. MS1-305US

1 **TECHNICAL FIELD**

2 This invention relates to systems and methods that support electronic
3 commerce and other business relationships over a network, such as the Internet.
4 More particularly, this invention relates to the exchange of configuration details
5 between trading partners for use in establishing a trading relationship.
6

7 **BACKGROUND**

8 The Internet and World Wide Web ("Web") provide a new frontier for
9 electronic commerce. Merchants are developing sites on the Web that consumers
10 can access and order goods and/or services. Businesses are using the Web to
11 automate and manage electronic communications amongst themselves, as well as
12 with their distributors, resellers, and suppliers.

13 Businesses engaged in commerce over the Internet exchange configuration
14 details to establish a connection between them. Business document gateways are
15 tools used to help business trading partners set up and manage electronic trading
16 relationships. One example of a business document gateway is the Commerce
17 Interchange Pipeline (CIP) from Microsoft Corporation. CIP is a facility for
18 interchanging business documents between trading partners in a manner that is
19 independent of data format and data transport. Commerce Interchange Pipeline
20 Manager (CIPM) is a tool that manages trading partners and the electronic
21 relationships with those trading partners implemented on the Commerce
22 Interchange Pipeline (CIP).

23 One problem with existing business document gateways is that they require
24 a user to manually enter all information for the home company and all information
25 for every trading partner with whom the home company trades. Unfortunately,

1 manually entering information for thousands of trading partners can be tedious,
2 time consuming, and is prone to error.

3 4 **SUMMARY**

5 This invention concerns an electronic commerce system that allows
6 potential trading partners to automatically configure a trading relationship for
7 network-based business exchanges.

8 In one implementation, the system has a first computer system at a first
9 trading partner and a second computer system at a second trading partner. The
10 computer systems are interconnected via a network, such as the Internet.

11 The automated configuration process involves two phases. In a first phase,
12 each of the trading partners enters its own configuration details (e.g., trading
13 partner name, mailing address, Web site address, email, network and data
14 communication protocol(s), cryptographic capabilities, digital certificates, etc.).
15 As an example, a user/operator at each trading partner manually enters the
16 information via a graphical user interface. Once the information is entered, the
17 trading partner publishes that information to a URL (universal resource locator) at
18 a Web site (hosted by the trading partner, or elsewhere).

19 In a second phase, one of the trading partners attempts to forge an
20 electronic trading relationship with a potential trading partner. The first trading
21 partner enters the URL for the potential trading partner's configuration details and
22 pulls the details down from the Web site addressed by the URL. The first trading
23 partner then automatically creates and configures the trading relationship for
24 online exchanges with the potential trading partner. This can be done by creating
25

1 a trading record and automatically populating that record using the potential
2 trading partner's configuration details.

3 4 **BRIEF DESCRIPTION OF THE DRAWINGS**

5 Fig. 1 shows a network architecture having two trading partners
6 interconnected via a distributed network.

7 Fig. 2 shows an exemplary computer that can be configured as a server
8 computer at each of the trading partners.

9 Fig. 3 is a flow diagram showing a two-phase automated configuration
10 process to establish an electronic trading relationship between the trading partners.

11 12 **DETAILED DESCRIPTION**

13 An electronic commerce system allows potential trading partners to
14 automatically configure a trading relationship for network-based business
15 exchanges. The trading relationship governs how the trading partners' computer
16 systems connect to one another and communicate over a network. The system
17 scales to many participating trading partners, but is described in the context of two
18 trading partners.

19 20 **Architecture**

21 Fig. 1 shows a network system 20 having a first computer system 22(1) at a
22 first trading partner and a second computer system 22(2) at a second trading
23 partner. A network 24, such as the Internet or other wide area network,
24 interconnects the computer systems 22(1) and 22(2). The trading partners are
25 involved in online commerce and hope to establish a trading relationship that

1 for use in automated configuration of the trading relationship. In one
2 implementation, the CIPM programs 38(1), 38(2) create trading partner records
3 50(1), 50(2) and automatically populate them with the other trading partner's
4 configuration details.

5 One exemplary implementation of the automated configuration process is
6 described below under the heading "Operation" and with reference to Fig. 3. Prior
7 to explaining this process, however, an exemplary implementation of a computer
8 used to implement the server computers 22(1), 22(2) is described.

9 10 **Exemplary Server Computer**

11 Fig. 2 shows an exemplary implementation of a server computer 22(1),
12 22(2). The computer is a general-purpose computing device in the form of a
13 conventional personal computer 100 that is configured to operate as a Web server.

14 Computer 100 includes a processing unit 102, a system memory 104, and a
15 bus 106 that couples various system components including the system memory
16 104 to the processing unit 102. The bus 106 represents one or more of any of
17 several types of bus structures, including a memory bus or memory controller, a
18 peripheral bus, an accelerated graphics port, and a processor or local bus using any
19 of a variety of bus architectures. The system memory 104 includes read only
20 memory (ROM) 108 and random access memory (RAM) 110. A basic
21 input/output system 112 (BIOS) is stored in ROM 108.

22 Computer 100 also has one or more of the following drives: a hard disk
23 drive 114 for reading from and writing to a hard disk, a magnetic disk drive 116
24 for reading from or writing to a removable magnetic disk 118, and an optical disk
25 drive 120 for reading from or writing to a removable optical disk 122 such as a CD

ROM or other optical media. The hard disk drive 114, magnetic disk drive 116, and optical disk drive 120 are connected to the bus 106 by a hard disk drive interface 124, a magnetic disk drive interface 126, and an optical drive interface 128, respectively. The drives and their associated computer-readable media provide nonvolatile storage of computer readable instructions, data structures, program modules and other data for the personal computer. Although a hard disk, a removable magnetic disk and a removable optical disk are described, other types of computer readable media can be used to store data, such as flash memory cards, digital video disks, random access memories (RAMs), read only memories (ROM), and the like.

A number of program modules may be stored on the hard disk, magnetic disk, optical disk, ROM, or RAM. These programs include an operating system 130, one or more application programs 132, other program modules 134, and program data 136. The programs 132 or modules 134 include, for example, the commerce server and Web server programs installed at each trading partner.

A user may enter commands and information into the personal computer 100 through input devices such as keyboard 138 and pointing device 140. Other input devices (not shown) may include a microphone, joystick, game pad, satellite dish, scanner, or the like. These and other input devices are often connected to the processing unit 102 through a serial port interface 142 that is coupled to the bus 106, but may be connected by other interfaces, such as a parallel port, game port, or a universal serial bus (USB).

A monitor 144 or other type of display device is also connected to the bus 106 via an interface, such as a video adapter 146. The monitor 144 is used to present a graphical user interface that assists a user/operator in entering the

1 configuration details of the trading partner. In addition to the monitor, personal
2 computers typically include other peripheral output devices (not shown) such as
3 speakers and printers.

4 The server computer 100 is connected to the Internet 24 through a network
5 interface or adapter 150, a modem 152, or other means for establishing
6 communications over the network. The modem 152, which may be internal or
7 external, is connected to the bus 106 via the serial port interface 142.

8 9 **Operation**

10 The architecture shown in Fig. 1 enables automated configuration of
11 trading partners who are creating an electronic trading relationship. The
12 automated configuration process has two phases. The first phase involves creation
13 and publishing of each trading partner's configuration details. In this phase, each
14 trading partner enters its configuration details and posts it to a Web site at a
15 selected URL. The second phase involves establishment of a trading relationship
16 that will govern the interactions between the trading partners' computing systems.
17 In the second phase, a potential trading partner accesses the configuration details
18 of another trading partner at the given URL and uses the details to automatically
19 configure the electronic trading relationship.

20 Fig. 3 shows the two-phase automated configuration process. The process
21 can be performed in software, hardware, or a combination of hardware and
22 software, and is described with reference to the architecture of Fig. 1.

23 At step 200 and 202, the configuration details for each trading partner
24 22(1), 22(2) are collected. In one implementation, CIPM program 36(1), 36(2)
25 presents one or more graphical user interface (UI) windows or dialog boxes that

enable a user/operator to manually enter the configuration details. Once collected, the configuration details 44(1), 44(2) are stored in the trading partners' CIPM databases 40(1), 40(2) (steps 204 and 206).

At steps 208 and 210, each trading partner posts its configuration details to a URL at a Web site that is accessible over the Web. In one implementation, the Web site is hosted by the respective computer systems 22(1), 22(2) and hence, the URL coincides with the trading partner's own Web site, such as "http://www.company.com/trading_partner_info.cio". Alternatively, the Web site may be independent of the trading partners, such as a site for an organization of trading partners.

The user/operator who enters the configuration details on behalf of a trading partner clicks a control (e.g., a “POST” or “PUBLISH” icon) or checks an appropriate box in the graphical UI window to publish the configuration details to the URL. The URL may be selected by the user/operator, or automatically assigned by the CIPM program. The posted configuration details 44(1)', 44(2)' are shown in Fig. 1 as part of pages 48(1), 48(2), which are stored in content databases 46(1), 46(2) and can be served by Web server 32(1), 32(2) to requesting trading partners.

This completes the creation and publishing phase of the automated configuration process. The second phase concerns establishment of a trading relationship. For discussion purposes, suppose that the first trading partner 22(1) is attempting to establish a relationship with the second trading partner 22(2).

At step 212, the first trading partner 22(1) initiates creation of a new trading relationship with the second trading partner 22(2). The user/operator at the first trading partner 22(1) uses the CIPM program 36(1) to set up the information

1 **Conclusion**

2 Although the invention has been described in language specific to structural
3 features and/or methodological steps, it is to be understood that the invention
4 defined in the appended claims is not necessarily limited to the specific features or
5 steps described. Rather, the specific features and steps are disclosed as preferred
6 forms of implementing the claimed invention.

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